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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,088	09/10/2001	Gilbert Theo Hinze	HINZE 1	1064
1444	7590	03/23/2004	EXAMINER	
BROWDY AND NEIMARK, P.L.L.C. 624 NINTH STREET, NW SUITE 300 WASHINGTON, DC 20001-5303			CHORBAJI, MONZER R	
			ART UNIT	PAPER NUMBER
			1744	

DATE MAILED: 03/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/830,088	Applicant(s) HINZE, GILBERT THEO	
	Examiner MONZER R CHORBAJI	Art Unit 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This final office action is in response to the amendment received on 01/16/2004

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 32, 40-42, and 44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 32, lines 15-20; applicant recites the following feature "modulating the respective properties of the predominantly anion-containing solution by separate and independent recirculation of either one or both of the solutions through a same electrode chamber or a counter-electrode chamber so that the resultant solutions are in a state of ionic imbalance". Such a feature was not taught in the original disclosure. The same applies to claims 40-42 and 44.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 32-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi (EP 0,802,164) in view of Bakhir et al (U.S.P.N. 5,427,667).

With respect to claims 32, 41-42, and 44, Doi teaches the following: a method (page 1, lines 5-8) for treating bulk food storage containers (page 5, lines 51-55) in a bulk food storage facility by producing electrochemically activated aqueous solution, treating fresh produce with electrochemically activated aqueous solution (page 5, lines 54-55) during storage in a food container (page 5, line 55), and the means for producing the activated aqueous solution can be transported (page 15, lines 50-53) such that a transporter is inherently needed to transport the means. In addition, Doi discloses that electrolytic cell with a diaphragm between the anode and the cathode resulting in separating the cell into an anode chamber and a cathode chamber is known. As a result, such a cell is capable of producing separate predominantly anodic and cathodic solutions that are applied separately (page 1, lines 27-37). Doi also, teaches of adding one solution to another (page 1, lines 54-59) such that the mixed solution is applied concurrently. Furthermore, Doi teaches that it is known to modulate either solutions by recirculating either solution within the apparatus (page 1, lines 55-59 and page 2, lines

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1-11) and that it is known to independently treat a container or produce with the separate oxidant, predominantly anion-containing solution and the separate reductant, predominantly cation-containing solution (page 2, lines 36-37 and lines 54-56).

However, Doi fails to disclose an electrolysis device having a through-flow electrochemical cell with two co-axial cylindrical electrodes with a co-axial diaphragm between the two electrodes so as to separate an inter-electrode space into a catholyte chamber and an anolyte chamber such that two solutions are produced separately.

Bakhr et al discloses an electrolysis device (figure 1a, 5) having a through-flow electrochemical cell (figure 2, 15, 14, 12, and 13) with two co-axial cylindrical electrodes (figure 2, 7 and 6) with a co-axial diaphragm between the two electrodes (figure 2, 8) so as to separate an inter-electrode space into a catholyte chamber and an anolyte chamber such that an anodic (i.e., oxidant) and a cathodic (i.e., reductant) solutions are produced separately (col.9, lines 37-39). In addition, Bakhr et al teaches recirculating either solution (figures 3b, 3c, and col.8, lines 1-6). It would have been obvious to one having ordinary skill in the art to modify Doi method and apparatus to include a diaphragm between the cathode and the anode in order to optimize the electrolysis process by using such a diaphragm (col.4, lines 53-55).

With respect to claim 33, Doi teaches that ice made from the electrochemically activated aqueous solution is used to pack seafood in the container (page 2, lines 47-48, and page 10, lines 1-4). In addition, Doi teaches that it is known to use the catholyte and the anolyte solutions separately (page 2, lines 36-37 and lines 54-56). Also, Doi discloses that the electrochemically activated aqueous solution can be used in the food

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industry (page 5, lines 54-55). Thus, it would have been obvious to one having ordinary skill in the art to apply ice made from either the catholyte or anolyte solutions in packing fresh produce in the container as taught by Doi.

With respect to claim 34, Doi teaches that a small amount of aqueous salt solution is added (page 1, lines 24-26) before the electrolysis process. However, a small amount is inclusive of the range in claim 34. Furthermore, optimization of such a parameter (concentration) is well within the scope of the artisan.

With respect to claim 35, since the instant claims and Bakhir et al produce separate anolyte and catholyte solutions using the same apparatus; then such solutions are intrinsically labile as well as would intrinsically disappear in about 96 hours with relatively no residues being produced.

With respect to claims 36 and 38, Bakhir et al discloses a redox potential and pH values (Table 2).

With respect to claims 37 and 39, Doi discloses that an anion-containing solution or a cation-containing solution inherently includes hydroxide ions (page 1, line 20).

With respect to claim 40, Doi teaches that the activated aqueous solution can be applied to various fields (page 16, lines 41-43). Furthermore, Doi teaches that it is known to modulate either solution separately by recirculating either one within the apparatus (page 1, lines 55-59 and page 2, lines 1-11). Thus, resulting in manipulating the physical characteristics of the activated solution depending on the type of field the solution or solutions are intended to applied to.

With respect to claim 43, Doi discloses that the activated aqueous solution be applied to food facilities (page 5, lines 54-55) such that the activated aqueous solution is in iced form (page 10, lines 1-4). In addition, Doi teaches that it is known to use the catholyte and the anolyte solutions separately (page 2, lines 36-37 and lines 54-56). Thus, in order to form the catholyte or the anolyte solutions into ice, it is credible to believe that Doi bulk food storage facility includes a freezing means.

Response to Arguments

6. Applicant's arguments filed 01/16/2004 have been fully considered but they are not persuasive.

On page 12 of the response, applicant argues, "Doi does not disclose or suggest sending the entire feed solution through one electrode chamber and thereafter recirculating all or part of the electrolyzed solution through the other electrode chamber". Claims 32-44 and the original disclosure do not recite such a limitation. However, since Doi teaches that it is known to have an electrolytic cell with a diaphragm separating an anodic and a cathodic chamber and teaches the separate use of such solutions then it is credible to believe that in order to generate a cathodic solution one skilled in the art would send the entire feed solution through one electrode chamber. Regarding recirculation of the solution, Doi teaches that it known (page 2, lines 55-59 and page 3, lines 1-11). Also, note that Bakhir et al teaches the concept of recirculating either the cathodic or the anodic solutions (figures 3b, 3c, and col.8, lines 3-6).

On page 13 of the response, applicant argues, "Doi teaches adding one solution to another such that the mixed solution is applied concurrently". Doi discloses that it is

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known to use the cathodic and the anodic solutions separately (page 2, lines 36-37 and lines 54-56).

On page 14 of the response, applicant argues, "There is no suggestion in Bakhir of the possibility of applying the electrolytic cell disclosed therein for treating bulk food storage containers, and there is nothing in Bakhir that teaches any particular system design or application parameters for such application". The Bakhir et al reference is not combined for applying electrolytic cell solution for treating bulk food. Such a feature is disclosed in the Doi reference. However, the Bakhir et al reference teaches the same apparatus as the instantaneous claims and also teaches the separate use of each solution (col.7, lines 63-66). In addition, Bakhir et al teaches the concept of recirculating (figures 3b and 3c) the solutions that result in the specific operating parameters as mentioned in the instantaneous claims.

On page 15 of the response, applicant argues, "There is no reason one skilled in the art would combine Bakhir et al. with Doi". One skilled in the art would have been motivated to combine Bakhir et al. with Doi in order to optimize the electrolysis process by using such a diaphragm (col.4, lines 53-55) as taught by Bakhir et al.

On page 15 of the response, applicant argues, "There is nothing in any of the cited references that suggests this method of producing ice". Doi teaches that ice made from the electrochemically activated aqueous solution is used to pack seafood in the container (page 2, lines 47-48, and page 10, lines 1-4). In addition, Doi teaches that it is known to use the catholyte and the anolyte solutions separately (page 2, lines 36-37 and lines 54-56). Also, Doi discloses that the electrochemically activated aqueous

solution can be used in the food industry (page 5, lines 54-55). Thus, it would have been obvious to one having ordinary skill in the art to apply ice made from either the catholyte or anolyte solutions in packing fresh produce in the container as taught by Doi.

On page 16 of the response, applicant argues, "It is therefore submitted that Doi's claim that his solution is suitable for use in the food industry, medical products, and the like is speculative, vague, and unsound". Doi's statement regarding application to the food industry includes any specific type of food processing.

On page 17 of the response, applicant argues, "with respect to claim 34, it is respectfully submitted that small amount is a relative term that is vague and speculative". Doi teaches that a small amount of aqueous salt solution is added (page 1, lines 24-26) before the electrolysis process. However, a small amount is inclusive of the range disclosed in claim 34 such that optimization of such a parameter (concentration) is the result of obvious and routine experimentation.

Conclusion

7. Due to the complexity of this invention, a personal interview may help both sides to understand each other's positions.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

9. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONZER R CHORBAJI whose telephone number is (571) 272-1271. The examiner can normally be reached on M-F 8:30-5:00.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBERT J WARDEN can be reached on (571) 272-1281. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Monzer R. Chorbaji
Patent Examiner

MRC

Robert J. Warden, Sr.
ROBERT J. WARDEN, SR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700